

Attorney Docket: 071469-0306776
Client Reference: PC6021A2
Application No.: 10/705,397

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A dual chamber apparatus comprising:
a first chamber;
a second chamber which is configured to be coupled to said first chamber at an interface, each of said first chamber and said second chamber having a transfer opening located at said interface;
a gate valve assembly, disposed in said first chamber, sealing said first chamber from said second chamber;
an interface plate located on said second chamber, said interface plate comprising a flange portion abutting said second chamber and a frontal portion extending outwardly from said flange portion, wherein said frontal portion is constructed to engage said gate valve assembly in said first chamber; and
an insulating plate located on one of said first chamber and said second chamber at said interface and configured to have a low thermal conductivity;
wherein said first chamber and said second chamber can be independently controlled at different temperatures when said first chamber and said second chamber are coupled together,
wherein, when said first and second chambers are coupled to one another, said insulating plate surrounds said frontal portion and is disposed adjacent to said flange portion, and
wherein said interface plate establishes a continuous heat path from said second chamber to said gate valve assembly.
2. (Original) The dual chamber apparatus as claimed in claim 1, further comprising:
at least one alignment device on one of said first chamber and said second chamber; and

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at least one alignment hole corresponding to each said at least one alignment device on the other of said first chamber and said second chamber.

3. (Currently Amended) The dual chamber apparatus as claimed in claim 1, further comprising:

at least ~~en~~ one chamber fastening device on one of said first chamber and said second chamber, and

at least one chamber fastening hole corresponding to each said at least one alignment device on the other of said first chamber and said second chamber.

4. (Original) The dual chamber apparatus as claimed in claim 1, wherein said first chamber is a chemical oxide removal chamber and said second chamber is a heat treatment chamber.

5. (Currently Amended) The dual chamber apparatus as claimed in claim 1, ~~further comprising a gate valve assembly for sealing said first chamber from said second chamber~~ wherein said insulating plate is located on said second chamber.

6. (Original) The dual chamber apparatus as claimed in claim 1, wherein said first chamber and said second chamber are essentially evacuated and a seal created between said first chamber and said second chamber is a vacuum seal.

7. (Original) The dual chamber apparatus as claimed in claim 1, wherein said insulating plate is located on said first chamber.

8. (Currently Amended) The dual chamber apparatus as claimed in claim 1, wherein said insulating plate is constructed of ~~Teflon~~ polytetrafluoroethylene.

9. (Currently Amended) The dual chamber apparatus as claimed in claim 1, wherein said ~~insulating~~ interface plate comprises a contact member configured to separate said first chamber from said second chamber by a predetermined distance.

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10. (Original) The dual chamber apparatus as claimed in claim 9, wherein a surface area of said contact member is substantially smaller than a surface area of said insulating plate.

11. (Currently Amended) A method for manufacturing a dual chamber system comprising a first chamber and a second chamber, the method comprising:

coupling an insulating plate around a transfer opening of one of said first chamber and said second chamber;

coupling an interface plate on said second chamber, said interface plate comprising a flange portion abutting said second chamber and a frontal portion extending outwardly from said flange portion, wherein said frontal portion is constructed to engage a gate valve assembly in said first chamber, wherein, when said first and second chambers are coupled to one another, said insulating plate surrounds said frontal portion and is disposed adjacent to said flange portion, and wherein said interface plate establishes a continuous heat path from said second chamber to said gate valve assembly;

aligning said first chamber with said second chamber at an interface;
coupling said first chamber to said second chamber;
forming a vacuum seal between said first chamber and said second chamber; and
controlling a temperature within said first chamber and said second chamber independently when said first chamber and said second chamber are coupled together .

12. (Original) The method for manufacturing a dual chamber system as claimed in claim 11, further comprising separating said first chamber and from said second chamber by a predetermined distance.

13. (Currently Amended) A dual chamber apparatus comprising:
a first chamber;
a second chamber which is configured to be coupled to said first chamber at an interface, each of said first chamber and said second chamber having a transfer opening located at said interface;

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an insulating plate located between said first chamber and said second chamber at said interface;

a contact member configured to separate said first chamber from said second chamber by a predetermined distance, the surface area of said contact member being substantially smaller than a surface area of said insulating plate;

at least one alignment structure on one of said first chamber and said second chamber; and

at least one complementary alignment structure corresponding to each said at least one alignment structure on the other of said first chamber and said second chamber;

a gate valve assembly, disposed in said first chamber, sealing said first chamber from said second chamber; and

an interface plate located on said second chamber, said interface plate comprising a flange portion abutting said second chamber and a frontal portion extending outwardly from said flange portion, wherein said frontal portion is constructed to engage said gate valve assembly in said first chamber.

wherein, when said first and second chambers are coupled to one another, said insulating plate surrounds said frontal portion and is disposed adjacent to said flange portion, and

wherein said interface plate establishes a continuous heat path from said second chamber to said gate valve assembly.